

(Rev. 2-32)

U.S. Department of Commerce
Patent and Trademark Office

Atty. Docket No.
IMMR-0097B

Serial No.
10/782,953

Information Disclosure Statement by Applicant

Applicant:
Erik J. Shahoian

(Use several sheets if necessary)

Filed:
February 23, 2004

Group:
2673

U.S. Patent Documents

Init.

/LL/

A

Document No.

Date _____

Name _____

Class

Subclass

Filing Date

RE34,095

10/13/1992

Padula et al.

Foreign Documents

Init.

Document No.

Date _____

Country

Class

Subclass

Translation

☒ Yes

No

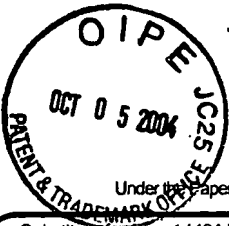
Other Documents (Including Author, Title, Date, Pertinent Pages, etc.)

Examiner

/Lun Lao/

Date Considered	04/11/2007
-----------------	------------

Examiner: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include a copy of this form with the next communication to applicant.



(2 of 2)

PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 1 of 5

Complete if Known

Application Number	10/782,953
Filing Date	February 23, 2004
First Named Inventor	Erik J. Shahoian
Art Unit	2673
Examiner Name	Unassigned
Attorney Docket Number	IMMR060/04US

U.S. PATENT DOCUMENTS

Examiner	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number Kind Code ² (if known)			
/L.L./		3,875,488	04-1975	Crocker et al.	
		4,436,188	03-1984	Jones	
		4,477,043	10-1984	Repperger	
		4,804,016	08-1988	Joyce	
		4,782,327	11-1988	Kley et al.	
		4,794,384	12-1988	Jackson	
		4,800,721	01-1989	Cemenska et al.	
		4,839,838	06-1989	LaBiche et al.	
		4,861,269	08-1989	Meenen, Jr.	
		4,906,843	03-1990	Jones et al.	
		4,935,728	06-1990	Kley	
		4,961,038	10-1990	MacMinn	
		4,983,901	01-1991	Lehmer	
		5,044,956	09-1991	Behensky et al.	
		5,065,145	11-1991	Purcell	
		5,076,517	12-1991	Ferranti et al.	
		5,095,303	03-1992	Clark et al.	
		5,103,404	04-1992	McIntosh	
		5,107,080	04-1992	Rosen	
		5,107,262	04-1992	Cadoz et al.	
		5,116,180	05-1992	Fung et al.	
		5,139,261	08-1992	Openiano	
		5,189,355	02-1993	Larkins et al.	
		5,193,963	03-1993	McAfee et al.	
		5,197,003	03-1993	Moncrief et al.	
		5,220,260	06-1993	Schuler	
		5,223,776	06-1993	Radke et al.	
		5,235,868	08-1993	Culver	
		5,264,768	11-1993	Gregory et al.	
		5,275,565	01-1994	Moncrief	
		5,286,203	02-1994	Fuller et al.	
		5,313,230	05-1994	Venolia et al.	
		5,354,162	10-1994	Burdea et al.	
		5,355,148	10-1994	Anderson	

Examiner
Signature

/Lun Lao/

Date
Considered

04/11/2007

¹ EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

² Applicant's unique citation designation number (optional). ³ Kind Codes of U.S. Patent Documents at www.uspto.gov or MPEP 901.04. ⁴ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁵ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁶ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁷ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 2

of

5

Complete if Known

Application Number	10/782,953
Filing Date	February 23, 2004
First Named Inventor	Erik J. Shahoian
Art Unit	2673
Examiner Name	Unassigned
Attorney Docket Number	IMMR060/04US

U.S. PATENT DOCUMENTS

Examiner	Cite No. ¹	Document Number Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
/L.L./		5,381,080	01-1995	Schnell et al.	
		5,396,266	03-1995	Brimhall	
		5,398,044	03-1995	Hill	
		5,405,152	04-1995	Katanics et al.	
		5,457,479	10-1995	Cheng	
		5,459,382	10-1995	Jacobus et al.	
		5,471,571	11-1995	Smith et al.	
		5,473,235	12-1995	Lance et al.	
		5,473,344	12-1995	Bacon et al.	
		5,491,477	02-1996	Clark et al.	
		5,512,919	04-1996	Araki	
		5,513,100	04-1996	Parker et al.	
		5,530,455	06-1996	Gillick et al.	
		5,550,562	08-1996	Aoki et al.	
		5,565,887	10-1996	McCambridge et al.	
		5,576,727	11-1996	Rosenberg et al.	
		5,583,407	12-1996	Yamaguchi	
		5,589,854	12-1996	Tsai	
		5,596,347	01-1997	Robertson et al.	
		5,656,901	08-1997	Kurita	
		5,666,473	09-1997	Wallace	
		5,691,898	11-1997	Rosenberg et al.	
		5,694,013	12-1997	Stewart et al.	
		5,709,219	01-1998	Chen et al.	
		5,714,978	02-1998	Yamanaka	
		5,721,566	02-1998	Rosenberg et al.	
		5,724,278	03-1998	Chen et al.	
		5,734,373	03-1998	Rosenberg et al.	
		5,736,978	04-1998	Hasser et al.	
		5,745,715	04-1998	Pickover et al.	
		5,754,023	05-1998	Rosten et al.	
		5,755,577	05-1998	Gillio	
		5,757,358	05-1998	Osga	
/L.L./		5,760,764	06-1998	Martinelli	

Examiner
Signature

/Lun Lao/

Date
Considered

04/11/2007

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Kind Codes of U.S. Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST:3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet **3** of **5****Complete if Known**

Application Number	10/782,953
Filing Date	February 23, 2004
First Named Inventor	Erik J. Shahoian
Art Unit	2673
Examiner Name	Unassigned
Attorney Docket Number	IMMR060/04US

U.S. PATENT DOCUMENTS					
Examiner	Cite No. ¹	Document Number Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
/L.L./		5,767,839	06-1998	Rosenberg	
		5,771,037	06-1998	Jackson	
		5,781,172	07-1998	Engel et al.	
		5,790,108	08-1998	Salcudean et al.	
		5,802,353	09-1998	Avila et al.	
		5,805,140	09-1998	Rosenberg et al.	
		5,805,165	09-1998	Thorne, III et al.	
		5,808,601	09-1998	Leah et al.	
		5,808,603	09-1998	Chen	
		5,823,876	10-1998	Unbehand	
		5,825,308	10-1998	Rosenberg	
		5,831,408	11-1998	Jacobus et al.	
		5,844,392	12-1998	Peurach et al.	
		5,877,748	03-1999	Redlich	
		5,880,714	03-1999	Rosenberg et al.	
		5,889,670	03-1999	Schuler et al.	
		5,912,661	06-1999	Siddiqui	
		5,944,151	08-1999	Jakobs et al.	
		5,956,484	09-1999	Rosenberg et al.	
		5,959,613	09-1999	Rosenberg et al.	
		5,990,869	11-1999	Kubica et al.	
		6,004,134	12-1999	Marcus et al.	
		6,005,551	12-1999	Osborne et al.	
		6,020,876	02-2000	Rosenberg et al.	
		6,061,004	05-2000	Rosenberg	
/L.L./		6,088,017	07-2000	Tremblay et al.	

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)			
/L.L./		EP	0085518	A1			
		EP	875819				
		WO	95/32459				
		WO	97/21160				
/L.L./		WO	00/21071				

Examiner
Signature

/Lun Lao/

Date
Considered

04/11/2007

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Kind Codes of U.S. Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 4 of 5

Complete if Known

Application Number	10/782,953
Filing Date	February 23, 2004
First Named Inventor	Erik J. Shahoian
Art Unit	2673
Examiner Name	Unassigned
Attorney Docket Number	IMMR060/04US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
/L.L./		Adachi et al., "Sensory Evaluation of Virtual Haptic Push-Buttons," Technical Research Center, Suzuki Motor Corp., 1994.
		Adachi et al., Sensory Evaluation of Virtual Haptic Push-Buttons, 1994, Suzuki Motor Corp., pp. 1-7.
		Akamatsu et al., Multimodal Mouse: A Mouse-Type Device with Tactile and Force Display, 1994, Presence vol. 3, pp. 73-80.
		Atkinson et al., "Computing with Feeling," Comput. & Graphics, vol. 2, 1977, pp. 97-103.
		Batter et al., "Grobe-1: A computer Display to the sense of Feel," Proc. IFIP Congress, 1971, pp. 759-763.
		Brooks, Jr. et al., "Project GROPE, Haptic Displays for Scientific Visualization," Computer Graphics, vol. 24, #4, 1990, pp. 177-184.
		Buttolo et al., "Pen-Based Force Display for Precision Manipulation in Virtual Environments," 0-8186-7084 IEEE Mar. 1995, pp. 217-224.
		Colgate et al., "Implementation of Stiff Virtual Walls in Force-Reflecting Interfaces," Northwestern University, IL, 1993., pp. 1-8.
		Gotow et al., "Perception of Mechanical Properties at the Man-Machine Interface," IEEE CH2503-1, 1987, pp. 688-690.
		Hannaford et al., "Performance Evaluation of a 6-Axis Generalized Force-Reflecting Teleoperator," IEEE Transactions on Systems, Man, and Cybernetics, vol. 21, No. 3, 1991, pp. 621-623, 631-633.
		Hirota et al., "Development of Surface Display," IEEE 0-7803-1363-1, 1993, pp. 256-262.
		Howe et al., "Task Performance w/ a dextrous Teleoperated Hand System," Proc. of SPIE, vol. 1833, 1992, pp. 1-9.
↓		Kelley et al., "On the Development of a Force-Feedback Mouse and Its Integration Into a Graphical User Interface," Symp. on Haptic Interfaces for Virtual Envir. and Teleoperator Systems, 1994 Int'l Mech. Eng. Congress and Exhibition, Nov. 1994.
/L.L./		Kilpatrick et al., "The Use of Kinesthetic Supplement in an Interactive Graphics System," University of North Carolina, 1976, pp. 1-172.

Examiner
Signature

/Lun Lao/

Date
Considered

04/11/2007

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 5 of 5

Complete if Known

Application Number	10/782,953
Filing Date	February 23, 2004
First Named Inventor	Erik J. Shahoian
Art Unit	2673
Examiner Name	Unassigned
Attorney Docket Number	IMMR060/04US

OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	
/L.L./		Millman et al., "Design of a 4 Degree of Freedom Force-Reflecting Manipulandum with a Specified Force/Torque Workspace," IEEE CH2969-4, 1991, pp. 1488-1493.	
		Munch et al., "Intelligent Control for Haptic Displays," Eurographics '96, vol. 15, No. 3, 1996, pp. 217-226.	
		Ouh-Young et al., "Creating an Illusion of Feel: Control Issues in Force Display," Univ. of N. Carolina, 1989, pp. 1-14.	
		Rosenberg, "Perceptual Design of a Virtual Rigid Surface Contact," Armstrong Laboratory AL/CF-TR-1995-0029, 1993, pp. 1-45.	
		Rosenberg et al., "A Force Feedback Programming Primer," Immersion Corp., 1997, pp. 1-176.	
		Rosenberg et al., "Commercially Viable force feedback Controller for Individuals with Neuromotor Disabilities," Armstrong Laboratory, AL/CF-TR-1997-0016, 1996, pp. 1-33.	
		Rosenberg et al., "Perceptual Decomposition of Virtual Haptic Surfaces," Proc. IEEE Symposium on Research Frontiers in Virtual Reality, 1993, pp. 1-8.	
		Rosenberg, L., "Virtual fixtures as tools to enhance operator performance in telepresence environments," SPIE Manipulator Technology, 1993, pp. 1-12.	
		Su et al., "The Virtual Panel Architecture: A 3D Gesture Framework," Computer Science Depts., Univ. of Maryland, Texas A&M Univ., Jan. 1993.	
		Winey III, "Computer Simulated Visual & Tactile Feedback as an Aid to Manipulator & Vehicle Control," MIT, 1981, pp. 1-79.	
/L.L./		Yokokoji et al., "What you can see is what you can feel," IEEE 0-8186-7295-1, 1996, pp. 46-54.	

Examiner
Signature

/Lun Lao/

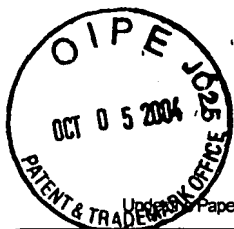
Date
Considered

04/11/2007

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



(1 of 2)

PTO/SB/08A (10-01)

Approved for use through 10/31/2002. OMB 0851-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 1 of 3

Complete if Known

Application Number	10/782,953
Filing Date	February 23, 2004
First Named Inventor	Erik J. Shahoian
Art Unit	2673
Examiner Name	Unassigned
Attorney Docket Number	IMMR060/04US

U.S. PATENT DOCUMENTS					
Examiner	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number Kind Code ² (if known)			
/L.L./		6,448,977	9/10/2002	Braun et al.	
↓		6,422,941	7/23/2002	Thomer et al.	
		6,219,034	4/17/2001	Elbing et al.	
		6,160,489	12/12/2000	Perry et al.	
		6,111,577	8/29/2000	Zilles et al.	
		5,690,582	11/25/1997	Ulrich et al.	
		5,575,761	11/19/1996	Hajianpour	
		5,437,607	8/1/1995	Taylor	
		5,436,622	7/25/1995	Gutman et al.	
		5,283,970	2/8/1994	Aligner	
		5,186,695	2/16/1993	Mangseth et al.	
		5,175,459	12/29/1992	Danial et al.	
		5,165,897	11/24/1992	Johnson	
		5,022,384	6/11/1991	Freels	
		4,885,565	12/5/1989	Embach	
		4,484,191	11/20/1984	Vavra	
		4,464,117	8/7/1984	Foerst	
		4,333,070	6/1/1982	Barnes	
		4,262,549	4/21/1981	Schwellenbach	
	↓		4,127,752	11/28/1978	Lowthorp
/L.L./		2,972,140	2/14/1961	Hirsch	

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)			
/L.L./		JP	H2-185278		7/19/1990	Taito Corporation	
		JP	H4-8381		1/13/1992	Epoch Co. and Key- Planning Co.	
		JP	H7-24147		1/27/1995	Sega Corporation	
		JP	H5-192449		8/3/1993	Taito Corporation	
/L.L./							

Examiner
Signature

/Lun Lao/

Date
Considered

04/11/2007

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Kind Codes of U.S. Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	10/782,953
		Filing Date	February 23, 2004
		First Named Inventor	Erik J. Shahoian
		Art Unit	2673
		Examiner Name	Unassigned
Sheet 2 of 3	Attorney Docket Number	IMMR060/04US	

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	
/L.L./		PATRICK, "Design, Construction, and Testing of a Fingertip Tactile Display for Interaction with Virtual and Remote Environments," <i>Master of Science Thesis</i> , MIT, Aug. 1990, archived Nov. 8, 1990.	
		CALDER, "Design of A Force-Feedback Touch-Introducing Actuator For Teleoperator Robot Control," <i>Bachelor of Science Thesis</i> , MIT, May 1983, archived June 23, 1983.	
		WIKER, "Teletouch Display Development: Phase 1 Report," <i>Technical Report 1230</i> , Naval Ocean Systems Center, San Diego, July 1988.	
		BLISS, "Optical-to-Tactile Image Conversion for the Blind," <i>IEEE Transactions on Man-Machine Systems</i> , Vol. MMS-11, No. 1, March 1970.	
		JOHNSON, "Shape-Memory Alloy Tactile Feedback Actuator," <i>Armstrong Aerospace Medical Research Laboratory</i> , AAMRL-TR-90-039, August, 1990.	
		KONTARINIS et al., "Tactile Display of Vibratory Information in Teleoperation and Virtual Environments," <i>PRESENCE</i> , 4(4):387-402, Harvard Univ., 1995.	
		AUKSTAKALNIS et al., "Silicon Mirage: The Art and Science of Virtual Reality," ISBN 0-938151-82-7, pp. 129-180, 1992.	
		EBERHARDT et al., "Inducing Dynamic Haptic Perception by The Hand: System Description and Some Results," <i>DSC-Vol. 55-1, Dynamic Systems and Control: Volume 1</i> , ASME 1994.	
		GOBEL et al., "Tactile Feedback Applied to Computer Mice," <i>International Journal of Human-Computer Interaction</i> , Vol. 7, No. 1, pp. 1-24, 1995.	
		PIMENTEL et al., "Virtual Reality: through the new looking glass," 2 nd Edition; McGraw-Hill, ISBN 0-07-050167-X, pp. 41-202, 1994.	
		"Cyberman Technical Specification," <i>Logitech Cyberman SWIFT Supplement to Logitech Mouse Technical Reference and Programming Guide</i> , 4/5/1994.	
		OUHYOUNG et al., "The Development of A Low-Cost Force Feedback Joystick and Its Use in the Virtual Reality Environment," <i>Proceedings of the Third Pacific Conference on Computer Graphics and Applications, Pacific Graphics '95</i> , Seoul, Korea, 21-24 August 1995.	
		KACZMAREK et al., "Tactile Displays," <i>Virtual Environment Technologies</i> , Chap. 9, pp. 349-414.	
↓		LAKE, "Cyberman from Logitech," at http://www.ibiblio.org/GameBytes/issue21/greviews/cyberman.html , 1994.	
/L.L./		"Component Maintenance Manual With Illustrated Parts List, Coaxial Control Shaker Part No. C-25502," Safe Flight Instrument Corporation, Revised 28 January 2002 (3 pages).	

Examiner Signature	/Lun Lao/	Date Considered	04/11/2007
--------------------	-----------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Substitute for form 1449A/PTO		Complete if Known			
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Application Number	10/782,953		
		Filing Date	February 23, 2004		
		First Named Inventor	Erik J. Shahoian		
		Art Unit	2673		
		Examiner Name	Unassigned		
Sheet	3	of	3	Attorney Docket Number	IMMR060/04US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	
/L.L./		"Technical Manual Overhaul Instructions With Parts Breakdown, Coaxial Control Shaker Part No. C-25502," Safe Flight Instrument Corporation, Revised 15 July 1980 (23 pages).	
↓		SCANNELL, "Taking a Joystick Ride," <i>Computer Currents</i> , Boston Edition, Vol. 9, No. 11, November 1994	
↓		YAMAKITA et al., "Tele-Virtual Reality of Dynamic Mechanical Model," <i>Proceedings of the 1992 IEEE/RSJ International Conference on Intelligent Robots and Systems</i> , Raleigh, NC, July 7-10, 1992	
↓		NOLL, "Man-Machine Tactile," <i>SID Journal</i> , July/August 1972 issue.	
/L.L./		ROSENBERG, "Virtual Fixtures: Perceptual Overlays Enhance Operator Performance In Telepresence Tasks," <i>Ph.D. Dissertation</i> , Stanford University, June 1994.	

Examiner Signature	/Lun Lao/	Date Considered	04/11/2007
--------------------	-----------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Please type a plus sign (+) inside this box →

+

2/23/2004

PTO/SB/08A (08-00)

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				<i>Complete if Known</i>	
				Application Number	10/782,953
				Filing Date	February 23, 2004
				First Named Inventor	Erik J. SHAHOIAN
				Group Art Unit	
Examiner Name					
Sheet	1	of	5	Attorney Docket Number	IMMR-060/04US
U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY
		Number	Kind Code ² (if known)		
/L.L./	A1	6,300,936		Braun et al.	10/09/2001
	A2	6,275,213		Tremblay et al.	08/14/2001
	A3	6,256,011		Culver	07/03/2001
	A4	6,243,078		Rosenberg	06/05/2001
	A5	6,219,032		Rosenberg et al.	04/17/2001
	A6	6,211,861		Rosenberg	04/03/2001
	A2	6,198,206		Saarmaa et al.	03/06/2001
	A3	6,184,868		Shaholian et al.	02/06/2001
	A4	6,166,723		Schena et al.	12/26/2000
	A5	6,154,201		Levin et al.	11/28/2000
	A6	6,128,006		Rosenberg et al.	10/03/2000
	A7	6,100,874		Schena et al.	08/08/2000
	A8	6,088,019		Rosenberg	07/11/2000
	A9	6,078,308		Rosenberg et al.	06/20/2000
	A10	6,044,646		Silverbrook	04/04/2000
	A11	6,028,593		Rosenberg et al.	02/22/2000
	A12	6,001,014		Ogata et al.	12/14/1999
	A13	5,990,869		Kubica et al.	11/23/1999
	A14	5,986,643		Harvill et al.	11/16/1999
	A15	5,984,880		Lander et al.	11/16/1999
	A16	5,979,892		Smith	11/09/1999
	A17	5,973,689		Gallery	10/26/1999
	A18	5,973,670		Barber et al.	10/26/1999
	A19	5,959,613		Rosenberg et al.	09/28/1999
	A20	5,956,016		Kuenzner et al.	09/21/1999
	A21	5,914,705		Johnson et al.	06/22/1999
	A22	5,903,085		Karam	05/11/1999
	A23	5,897,437		Nishiumi et al.	04/27/1999
	A24	5,894,263		Shimakawa et al.	04/13/1999
	A25	5,889,670		Schuler et al.	03/30/1999
	A26	5,857,986		Moriyasu	01/12/1999
	A27	5,825,308		Rosenberg	10/20/1998
	A28	5,805,140		Rosenberg et al.	09/08/1998
	A29	5,790,108		Salcudean et al.	08/04/1998
	A30	5,785,630		Bobick, et al.	07/28/1998
	A31	5,784,052		Keyson	07/21/1998
	A32	5,781,172		Engel et al.	07/14/1998
	A33	5,766,016		Sinclair et al.	06/16/1998
	A34	5,754,023		Roston et al.	05/19/1998
	A35	5,742,278		Chen et al.	04/21/1998
	A36	5,736,978		Hasser et al.	04/07/1998
	A37	5,734,373		Rosenberg et al.	03/31/1998
	A38	5,714,978		Yamanaka et al.	02/03/1998
/L.L./	A39	5,709,219		Chen et al.	01/20/1998

¹ Unique citation designation number.

² See attached Kinds of U.S. Patent Documents.

Examiner Signature	/Lun Lao/	Date Considered	04/11/2007
-----------------------	-----------	--------------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Complete if Known	
				Application Number	
				10/782,953	
				Filing Date	
				February 23, 2004	
				First Named Inventor	
				Erik J. SHAHOIAN	
				Group Art Unit	
				Examiner Name	
				Attorney Docket Number	
				IMMR-060/04US	
Sheet	2	of	5		
/L.L./	A40	5,696,537		Solhjell	12/09/1997
	A41	5,691,747		Amano	11/25/1997
	A42	5,684,722		Thorner et al.	11/04/1997
	A43	5,666,138		Culver	09/09/1997
	A44	5,643,087		Marcus et al.	07/01/1997
	A45	5,642,469		Hannaford et al.	06/24/1997
	A46	5,629,594		Jacobus et al.	05/13/1997
	A47	5,625,576		Massie et al.	04/29/1997
	A48	5,589,828		Armstrong	12/31/1996
	A49	5,583,478		Renzi	12/10/1996
	A50	5,565,840		Thorner et al.	10/15/1996
	A51	5,547,382		Yamasaki et al.	08/20/1996
	A52	5,542,672		Meredith	08/06/1996
	A53	5,506,605		Paley	04/09/1996
	A54	5,489,812		Furuhata et al.	02/06/1996
	A55	5,466,213		Hogan et al.	11/14/1995
	A56	5,451,924		Massimino et al.	09/19/1995
	A57	5,440,183		Denne	08/08/1995
	A58	5,414,337		Schuler	05/09/1995
	A59	5,405,152		Katanics et al.	04/11/1995
	A60	5,399,091		Mitsumoto	03/21/1995
	A61	5,388,992		Franklin et al.	02/14/1995
	A62	5,334,027		Wherlock	08/02/1994
	A63	5,309,140		Everett, Jr., et al.	05/03/1994
	A64	5,299,810		Pierce et al.	04/05/1994
	A65	5,296,871		Paley	03/22/1994
	A66	5,275,174		Cook	01/04/1994
	A67	5,271,290		Fischer	12/21/1993
	A68	5,240,417		Smithson et al.	08/31/1993
	A69	5,212,473		Louis	05/18/1993
	A70	5,203,563		Loper, III	04/20/1993
	A71	5,186,629		Rohen	02/16/1993
	A72	5,185,561		Good et al.	02/09/1993
	A73	5,184,319		Kramer	02/02/1993
	A74	5,146,566		Hollis, Jr. et al.	09/08/1992
	A75	5,078,152		Bond et al.	01/07/1992
	A76	5,038,089		Szakaly	08/06/1991
	A77	5,035,242		Franklin et al.	07/30/1991
	A78	5,022,407		Horch et al.	06/11/1991
	A79	5,019,761		Kraft	05/28/1991
	A80	4,949,119		Moncrief et al.	08/14/1990
	A81	4,934,694		McIntosh	06/19/1990
	A82	4,930,770		Baker	06/05/1990
	A83	4,896,554		Culver	01/30/1990
	A84	4,891,764		McIntosh	01/02/1990
	A85	4,868,549		Affinito et al.	09/19/1989
	A86	4,795,296		Jau	01/03/1989
	A87	4,794,392		Sellinko	12/27/1988
	A88	4,787,051		Olson	11/22/1988
	A89	4,731,603		McRae et al.	03/15/1988
	A90	4,713,007		Alban	12/15/1987
	A91	4,708,656		de Vries et al.	11/24/1987
	A92	4,599,070		Hladky et al.	07/08/1986
	A93	4,581,491		Boothroyd	04/08/1986
	A94	4,550,617		Fraigner et al.	11/05/1985

Examiner Signature	/Lun Lao/	Date Considered	04/11/2007
--------------------	-----------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Complete if Known			
				Application Number		10/782,953	
				Filing Date		February 23, 2004	
				First Named Inventor		Erik J. SHAHOIAN	
				Group Art Unit			
				Examiner Name			
Sheet	3	of	5	Attorney Docket Number		IMMR-060/04US	
/L.L./	A95	4,513,235		Acklam et al.		04/23/1985	
	A96	4,414,984		Zarudiansky		11/15/1983	
	A97	4,236,325		Hall et al.		12/02/1980	
	A98	4,160,508		Salisbury, Jr.		07/10/1979	
	A99	3,919,691		Noll		11/11/1975	
	A100	3,911,416		Feder		10/07/1975	
	A101	3,903,614		Diamond et al.		09/09/1975	
	A102	3,902,687		Hightower		09/02/1975	
	A103	3,623,064		Kagan		11/23/1971	
	A104	3,517,446		Corlyon et al.		06/30/1970	
	A105	3,497,668		Hirsch		02/24/1970	
	A106	3,220,121		Cutler		11/30/1965	
/L.L./	A107	3,157,853		Hirsch		11/17/1964	

FOREIGN PATENT DOCUMENTS							
Examiner Initials*	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	T ⁴
		Office ¹	Number ²	Kind Code ³ (if known)			
/L.L./	B1		WO 00/03319			01/20/2000	
	B2		WO 98/32112			07/23/1998	
	B3		WO-97/31333			08/28/1997	
	B4		WO 95/20788			08/03/1995	
	B5		0 626 634	A2		11/30/1994	
	B6		0 607 580	A1		07/27/1994	
	B7		H5-86387			11/22/1993	
	B8		WO 92/00559			01/09/1992	
	B9		0 349 086	A1	Stork Kwant B.V.	01/03/1990	
	B10		0 265 011	A1		04/27/1988	
/L.L./	B11		S62-194389			12/10/1987	

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
/L.L./	C1	Baigrie, "Electric Control Loading - A Low Cost, High Performance Alternative," <i>Proceedings of Interservice/Industry Training Systems Conference</i> , pp. 247-254, November 6-8, 1990	
/L.L./	C2	Iwata, "Pen-based Haptic Virtual Environment," 0-7803-1363-1/93 IEEE, pp. 287-292, 1993	
/L.L./	C3	Russo, "The Design and Implementation of a Three Degree of Freedom Force Output Joystick," <i>MIT Libraries Archives</i> pp. 1-131, May 1990, archived 8/14/90	

¹ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).

² For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

³ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible.

⁴ Applicant is to place a check mark here if English language Translation is attached.

Examiner Signature	/Lun Lao/	Date Considered	04/11/2007
--------------------	-----------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		<i>Complete if Known</i>			
		Application Number	10/782,953		
		Filing Date	February 23, 2004		
		First Named Inventor	Erik J. SHAHOIAN		
		Group Art Unit			
		Examiner Name			
Sheet	4	of	5	Attorney Docket Number	IMMR-060/04US

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
/L.L./	C4	Brooks et al., "Hand Controllers for Teleoperation - A State-of-the-Art Technology Survey and Evaluation," <i>JPL Publication 85-11</i> , NASA-CR-175890; N85-28559, pp. 1-84, 03/1/1985	
	C5	Jones et al., "A perceptual analysis of stiffness," ISSN 0014-4819 Springer International (Springer-Verlag); <i>Experimental Brain Research</i> , Vol. 79, No. 1, pp. 150-156, 1990	
	C6	Burdea et al., "Distributed Virtual Force Feedback, Lecture Notes for Workshop on Force Display in Virtual Environments and its Application to Robotic Teleoperation," 1993 <i>IEEE International Conference on Robotics and Automation</i> , pp. 25-44, 05/02/1993	
	C7	Snow et al., "Model-X Force-Reflecting-Hand-Controller," NT Control No. NPO-17851; JPL Case No. 7348, pp. 1-4 with 45 pages of attachments, 06/15/1989	
	C8	Ouh-Young, "Force Display in Molecular Docking," Doctoral Dissertation, University of North Carolina at Chapel Hill, UMI Order No. 9034744, p. 1-369, 1990	
	C9	Tadros, "Control System Design for a Three Degree of Freedom Virtual Environment Simulator Using Motor/Brake Pair Actuators," <i>MIT Archive</i> , pp. 1-88, February 1990, archived 8/13/90	
	C10	Caldwell et al., "Enhanced Tactile Feedback (Tele-Taction) Using a Multi-Functional Sensory System," 1050-4729/93, pp. 955-960, 1993	
	C11	Adelstein et al., "Design and Implementation of a Force Reflecting Manipulandum for Manual Control research," DSC-Vol. 42, <i>Advances in Robotics</i> , pp. 1-12, 1992	
	C12	Gotow et al., "Controlled Impedance Test Apparatus for Studying Human Interpretation of Kinesthetic Feedback," <i>WAI11-11:00</i> , pp. 332-337	
	C13	Stanley et al., "Computer Simulation of Interacting Dynamic Mechanical Systems Using Distributed Memory Parallel Processors," DSC-Vol. 42, <i>Advances in Robotics</i> , pp. 55-61, ASME 1992	
	C14	Russo, "Controlling Dissipative Magnetic Particle Brakes in Force Reflective Devices," DSC-Vol. 42, <i>Advances in Robotics</i> , pp. 63-70, ASME 1992	
	C15	Kontarinis et al., "Display of High-Frequency Tactile Information to Teleoperators," <i>Telemanipulator Technology and Space Telerobotics</i> , Won S. Kim, Editor, Proc. SPIE Vol. 2057, pp. 40-50, Sep. 7-9, 1993	
	C16	Patrick et al., "Design and Testing of A Non-reactive, Fingertip, Tactile Display for Interaction with Remote Environments," <i>Cooperative Intelligent Robotics in Space</i> , Rui J. deFigueiredo et al, Editor, Proc. SPIE Vol. 1387, pp. 215-222, 1990	
	C17	Adelstein, "A Virtual Environment System For The Study of Human Arm Tremor," <i>Ph.D. Dissertation</i> , Dept. of Mechanical Engineering, MIT, June 1989, archived 3/13/90	
	C18	Bejczy, "Sensors, Controls, and Man-Machine Interface for Advanced Teleoperation," <i>Science</i> , Vol. 208, No. 4450, pp. 1327-1335, 1980	
	C19	Bejczy et al., "Generalization of Bilateral Force-Reflecting Control of Manipulators," <i>Proceedings Of Fourth CISM-IFTOMM</i> , Sep. 8-12, 1981	
	C20	McAfee et al., "Teleoperator Subsystem/Telerobot Demonstrator: Force Reflecting Hand Controller Equipment Manual," <i>JPL 1988</i> , JPL D-5172	
	C21	Minsky, "Computational Haptics: The Sandpaper System for Synthesizing Texture for a Force-Feedback Display," <i>Ph.D. Dissertation</i> , MIT, June 1995, archived 7/6/95	
	C22	Jacobsen et al., "High Performance, Dextrous Telerobotic Manipulator With Force Reflection," <i>Intervention/ROV '91 Conference & Exposition</i> , Hollywood, Florida, May 21-23, 1991	
	C23	Shimoga, "Finger Force and Touch Feedback Issues in Dexterous Telemanipulation," <i>Proceedings of Fourth Annual Conference on Intelligent Robotic Systems for Space Exploration</i> , Rensselaer Polytechnic Institute, Sep. 30- Oct. 1, 1992	
	C24	IBM Technical Disclosure Bulletin, "Mouse Ball-Actuating Device With Force and Tactile Feedback," Vol. 32, No. 9B, February 1990	
	C25	Terry et al., "Tactile Feedback In A Computer Mouse," <i>Proceedings of Fourteenth Annual Northeast Bioengineering Conference</i> , University of New Hampshire, March 10-11, 1988	
✓	C26	Howe, "A Force-Reflecting Teleoperated Hand System for the Study of Tactile Sensing in Precision Manipulation," <i>Proceedings of the 1992 IEEE International Conference on Robotics and Automation</i> , Nice, France, May 1992	
/L.L./	C27	Eberhardt et al., "OMAR - A Haptic display for speech perception by deaf and deaf-blind individuals," <i>IEEE Virtual Reality Annual International Symposium</i> , Seattle, WA, Sep. 18-22, 1993	

Examiner Signature	/Lun Lao/	Date Considered	04/11/2007
--------------------	-----------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				Complete if Known	
				Application Number	10/782,953
				Filing Date	February 23, 2004
				First Named Inventor	Erik J. SHAHOIAN
				Group Art Unit	
				Examiner Name	
Sheet	5	of	5	Attorney Docket Number	IMMR-060/04US

/L.L./	C28	Rabinowitz et al., "Multidimensional tactile displays: Identification of vibratory intensity, frequency, and contractor area," <i>Journal of The Acoustical Society of America</i> , Vol. 82, No. 4, October 1987	
/L.L./	C29	Bejczy et al., "Kinesthetic Coupling Between Operator and Remote Manipulator," <i>International Computer Technology Conference, The American Society of Mechanical Engineers</i> , San Francisco, CA, August 12-15, 1980	
	C30	Bejczy et al., "A Laboratory Breadboard System For Dual-Arm Teleoperation," <i>SOAR '89 Workshop, JSC</i> , Houston, TX, July 25-27, 1989	
	C31	Ouhyoung et al., "A Low-Cost Force Feedback Joystick and Its Use in PC Video Games," <i>IEEE Transactions on Consumer Electronics</i> , Vol. 41, No. 3, August 1995	
	C32	Marcus, "Touch Feedback in Surgery," <i>Proceedings of Virtual Reality and Medicine The Cutting Edge</i> , Sep. 8-11, 1994	
	C33	Bejczy, et al., "Universal Computer Control System (UCCS) For Space Telerobots," CH2413-3/87/0000/0318501.00 1987 IEEE, 1987	
	C34	Rosenberg et al., "The Use of Force Feedback to Enhance Grphical User Interfaces," <i>Stereoscopic Displays & Virtual Reality Systems III</i> (1996), Proc. SPIE 2653, pp. 243-248	
	C35	Schmolt et al., "Application Areas for A Force-Feedback Joystick," DSC-Vol. 49, Advances in Robotics, Mechatronics, and Haptic Interfaces, ASME 1993, pp. 47-54	
	C36	Ellis et al., "Design and Evaluation of a High-Performance Prototype Planar Haptic Interface," DSC-Vol. 49, Advances in Robotics, Mechatronics, and Haptic Interfaces, ASME Dec. 1993, pp. 55-65	
	C37	Hannaford et al., "Force-Feedback Cursor Control," NASA Tech Brief, Vol. 13, No. 11, Item #21, Jet Propulsion Lab., Nov. 1989	
	C38	Iwata, H., "Artificial Reality with Force-Feedback: Development of Desktop Virtual Space with Compact Master Manipulator," <i>Computer Graphics</i> , Vol. 24, No. 4, Aug. 1990, pp. 165-170	
	C39	Ramstein et al., "The Pantograph: A Large Workspace Haptic Device for a Multimodal Human-Computer Interaction," <i>Computer-Human Interaction, CHI '94</i>	
	C40	Rosenberg et al., "Commercially Viable Force Feedback Controller for Individuals with Neuromotor Disabilities," USAF Armstrong Lab., May 1996	
	C41	Rosenberg, L., "A Force Feedback Programming Primer - For PC Gaming Peripherals Supporting I-Force 2.0 and Direct - X 5.0," Immersion Corporation, 1997	
	C42	Hasser, C., "Tactile Feedback For a Force-Reflecting Haptic Display," School of Engineering Univ. of Dayton, Dec. 1995	
	C43	Hasser, C., "Tactile Feedback With Adaptive Controller for a Force-Reflecting Haptic Display - Part 1: Design," IEEE 0-7803-3131, Jan. 1996	
	C44	Dennerlein, Jack T. et al., "Vibrotactile Feedback for Industrial Telemanipulators," 6 th Ann. Symposium on Haptic Interfaces for Virtual Environment and Teleoperator Systems, ASME IMECE, Nov. 1997	
	C45	Akamatsu, M. et al., "Multimodal Mouse: A Mouse-Type Device With Tactile and Force Display," <i>Presence</i> , Vol. 3, No. 4, Winter 1994, pp. 73-80	
	C46	Kelley, A.J. et al., "MagicMouse: Tactile and Kinesthetic Feedback in the Human-Computer Interface Using an Electromagnetically Actuated Input/Output Device," Dept. of Elec. Eng. Univ. of British Columbia, Oct. 1993, pp. 1-27	
	C47	Ramstein, C., "Combining Haptic and Braille Technologies: Design Issues and Pilot Study," ACM 0-89791-776 Jun. 1996, pp. 37-44	
	C48	Payette, J. et al., "Evaluation of a Force Feedback (Haptic) Computer Pointing Device in Zero Gravity," DSC-Vol. 58, Proc. Of ASME Dynamics Systems and Control Division, ASME 1996, pp. 547-553	
	C49	Wiker, S. et al., "Development of Tactile Mice for Blind Access to Computers: Importance of Stimulation Locus, Object Size, and Vibrotactile Display Resolution," Proc. of Human Factors Society 35 th Annual Meeting 1991, pp. 708-712	
/L.L./	C50	Minsky, M. et al., "Feeling and Seeing: Issues in Force Display," ACM 089791-351-5, 1990, pp. 235-242, 270	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

196327 v1/RE
47HJ01!!DOC

¹ Unique citation designation number.

² Applicant is to place a check mark here if English language Translation attached.

Examiner Signature	/Lun Lao/	Date Considered	04/11/2007
--------------------	-----------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.